



## COVERSHEET

<b>Minister</b>	Hon Judith Collins KC	<b>Portfolio</b>	Space
<b>Title of Cabinet paper</b>	Outer Space and High-altitude Activities (Licences and Permits) Regulations 2017: Proposed Amendments	<b>Date to be published</b>	23 September 2024

### List of documents that have been proactively released

<b>Date</b>	<b>Title</b>	<b>Author</b>
12 July 2024	Outer Space and High-altitude Activities (Licences and Permits) Regulations 2017: Proposed Amendments	Office of the Minister for Space
12 July 2024	Regulatory Impact Statement: Outer Space and High-altitude Activities (Licences and Permits) Regulations 2017: Proposed Amendments	MBIE
7 August 2024	Outer Space and High-altitude Activities (Licences and Permits) Regulations 2017: Proposed Amendments  EXP-24-MIN-0040 Minute	Cabinet Office

### Information redacted

**YES / NO** (please select)

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Some information has been withheld for the reason of Privacy of natural persons.

# Regulatory Impact Statement: Amendments to orbital debris mitigation requirements

## Coversheet

### Purpose of Document

Decision sought:	<i>This impact statement is produced for the purpose of informing final Cabinet decisions on amendments to the Outer Space and High-altitude Activities (2017) orbital debris mitigation requirements.</i>
Advising agencies:	<i>Ministry of Business, Innovation and Employment</i>
Proposing Ministers:	<i>Minister for Space</i>
Date finalised:	<i>12-06-2024</i>

### Problem Definition

New Zealand's orbital debris mitigation requirements are set out in the Outer Space and High-altitude Activities Act (Licenses and Permits) Regulations 2017. The current requirements create regulatory uncertainty for both regulated parties and the regulator and legal risk to the Crown.

### Executive Summary

Applicants for payload permits (payloads are satellites or other objects that are launched into outer space) under the Outer Space and High-altitude Activities Act 2017 (the Act) must submit an Orbital Debris Mitigation Plan (ODMP) that meets the requirements of the Outer Space and High-altitude Activities Act (Licenses and Permits) Regulations 2017 (the Regulations). Non-statutory guidance is also provided to applicants.

The regulations reflect the language used by the Inter-Agency Space Debris Coordination Committee<sup>1</sup> and were intended to require applicants to adhere to international best practice. However, as the regulations use broad language such as 'minimise the risk' there is uncertainty about what risk thresholds and technical standards should be applied which gives rise to legal risk for the decision-making Minister and the regulator. Non-statutory guidance can help but not completely resolve this uncertainty. In addition, Legislation Design Advisory Group (LDAC) Guidance suggests that mandatory requirements should be in regulation not guidance.

In response to industry feedback and a relevant complex regulatory decision, we are seeking to create greater regulatory certainty about New Zealand's orbital debris mitigation requirements and to reduce legal risk while maintaining a flexible regulatory environment in line with the purposes of the Act.

Specifically, MBIE is proposing amendments to the existing regulations to:

- a. provide for greater clarity on acceptable risk thresholds,

<sup>1</sup> The Inter-Agency Space Debris Coordination Committee is an international governmental forum for the worldwide coordination of activities related to the issues of man-made and natural debris in space. It is comprised of various Space Agencies including NASA and ESA.

- b. incorporate internationally accepted technical standards, and
- c. create waivers processes for deviations from the acceptable risk thresholds.

Targeted consultation has been conducted with potentially impacted stakeholders, including launch providers, payload applicants and other relevant parties. Feedback from consultation showed broad agreement with the proposed approach. On the basis of consultation feedback, we refined and clarified the threshold requirements and waivers process aspects of the proposal.

Overall assessment of the costs and benefits of the proposed approach indicates that it will provide clarity for regulated parties and the regulatory decision maker, will reduce legal risk for the regulatory decision maker, and will not come with significant compliance costs.

### Limitations and Constraints on Analysis

Determining international best practice in this area has been difficult for some aspects of this policy work, in particular for waivers, because they depend on case-by-case assessment and there are no published criteria.

### Responsible Manager(s) (completed by relevant manager)

*Andrew Johnson*  
 Manager  
 Space Policy and Sector Development  
 Ministry of Business, Innovation and Employment

Privacy of natural persons



12-06-2024

### Quality Assurance (completed by QA panel)

Reviewing Agency: *Ministry of Business, Innovation and Employment*

Panel Assessment & Comment: An MBIE panel has reviewed this updated regulatory impact statement (RIS). The panel considers that the RIS meets the RIA quality criteria. Earlier comments by the panel seeking further information on the scale of the problem, clarity on the legal risk, and detail on the consultation were addressed to our satisfaction.

## Section 1: Diagnosing the policy problem

### What is the context behind the policy problem and how is the status quo expected to develop?

*What is the status quo?*

1. The Outer Space and High-altitude Activities Act 2017 (the Act) establishes a regulatory regime to ensure that New Zealand can meet its international obligations and manage the risks associated with space and high-altitude activities. Among others, the Act requires an orbital debris mitigation plan that meets any prescribed requirements.

*Current regulatory requirements for orbital debris mitigation plans (ODMP)*

2. MBIE is the regulator for outer space and high-altitude activities, and the Minister for Space is the decision maker for all licences and permits under this regulatory regime.
3. Section 13 of the Outer Space and High-altitude Activities Act (License and Permits) Regulations 2017 (the Regulations) prescribes requirements for an orbital debris mitigation plan for the purpose of sections 9(1)(c), 17(1)(b), 25(1)(c), and 33(1)(b) of the Act.
4. Section 13(2) of the Regulations outlines the requirements for an ODMP as follows:

An orbital debris mitigation plan must, —

- a. if the applicant is following a standard or guidelines of an international or any other body that relates to the mitigation of orbital debris, specify the standard or guidelines; and
  - b. if the plan has been assessed by a person or body that is independent of the applicant, specify that person or body and the result of the assessment; and
  - c. specify the mitigation measures taken or intended to be taken that relate to orbital debris, which measures must be sufficient to ensure that —
    - i. the release of debris during the normal operations of the vehicle or, as the case may be, the payload is limited; and
    - ii. the potential for break-up of the vehicle or, as the case may be, the payload while in orbit is minimised; and
    - iii. the potential for the vehicle or, as the case may be, the payload to collide with debris other than debris released in the course of the activity to which the licence or permit relates is minimised; and
    - iv. at the end of the activity to which the licence or permit relates, the vehicle or, as the case may be, the payload is disposed of in a way that minimises risks to, or in, Earth's environment and in the space environment (including the risk of collisions).
5. The Regulations reflect the language used by the international Inter-Agency Space Debris Co-ordination Committee and were intended to require applicants to adhere to international best practice for debris mitigation.
  6. The ODMP requirements set out in the Regulations are supported by published guidance. This guidance encourages applicants to the OSHAA regulatory regime to apply international technical standards for orbital debris mitigation in developing their ODMPs. The guidance lists out acceptable international standards and notes that applicants can nominate alternative equivalent standards.

7. Adherence to international orbital debris mitigation standards provides a pathway for applicants to demonstrate risks have been 'minimised' or 'limited' to an acceptable level. It is common practice for New Zealand regulated parties to demonstrate adherence to these standards.
8. The two main standards/guidelines currently used by regulated parties<sup>2</sup> feature some variation, but have the same fundamental orbital debris mitigation principles:
  - a. Limiting the objects released during normal operations.
  - b. Preventing intentional, accidental and collisional on orbit break-ups.
  - c. Safely disposing of spacecraft and orbital stages that have reached the end of their mission operations.
  - d. Limiting the risk to the Earth and space environments, including risk of human casualty, from re-entering space objects.

#### *Previous advice and decisions on orbital debris mitigation requirements*

9. In April 2023, officials provided advice to the then Acting Minister for Economic Development on the difficulty in interpreting the regulatory requirement to 'minimise' risk, which was demonstrated in a recent regulatory decision.
10. This difficulty related to how the regulator should approach the matter when a threshold specified in an international orbital debris mitigation standard was not met in circumstances where the standard had a waivers provision. The Regulations do not currently include a waiver provision or other exemptions regime and it was unclear whether this aspect of the recognised standard could be applied while still meeting the regulatory requirement to minimise risks.
11. The Acting Minister for Economic Development directed officials to report back on possible changes to the Regulations to provide greater clarity on regulatory requirements for ODMPs.
12. Following initial policy work, officials provided further advice to the former Minister for Economic Development in June 2023 regarding a proposed approach to amending the Regulations. MBIE then carried out targeted consultation on the proposed approach with relevant stakeholders, including launch licence and payload permit holders. The consultation was targeted due to the technical nature of orbital debris mitigation and the limited number of regulated parties in New Zealand.

#### **What is the policy problem or opportunity?**

13. Orbital debris pose serious safety and sustainability risks to Earth orbit. Mitigating the risk of orbital debris generation is a key part of New Zealand's role as a responsible space actor and regulator, ensuring a safe, sustainable space environment and meeting our international obligations in line with the purposes of the Act.
14. All payload permits and launch licence applications require an ODMP. In 2023, we issued 13 payload permits and had 7 orbital launches from New Zealand.
15. Feedback from some regulated parties and the regulator suggests that current regulatory requirements to 'minimise' or 'limit' orbital debris risks as set out in Section 13 of the Regulations do not provide enough clarity or certainty, particularly regarding alternatives to suggested approaches set out in non-statutory guidance.

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<sup>2</sup> NASA standard and ESA guidelines.



16. While additional non-statutory guidance provides additional information on ODMP requirements, Legislation Design Advisory Committee (LDAC) guidance recommends that more specific requirements should be in legislation rather than non-statutory guidance.
17. The following potential negative impacts may result from the status quo:
  - a. **Economic impacts** - regulatory uncertainty could disincentivise space activities occurring in/from New Zealand.
  - b. **Legal risk** – the lack of regulatory certainty creates legal risk for the regulatory decision maker arising from complexities in interpreting the Regulations and regulatory decision making.
  - c. **Lack of clarity in determining compliance** – without additional clarity on how we determine compliance there is a risk of a loss of public confidence in our regulatory decision-making abilities and process due to lack of transparency.
  - d. **International reputation** – consultation with other space agencies and regulators has highlighted the challenge with our current regulations. Without action to address the issues identified with the status quo, there are potential reputational risks and a misalignment with those who we benchmark ourselves against.
18. The identified problems and impacts are relevant to launch licence and payload permit holders (current and future), as well as the Ministry of Business, Innovation and Employment who carries out the regulatory function. Overseas space agencies and regulators may have an interest in the problem; however, we have not identified any impacts on their activities.

#### *Scope of the problem*

19. The scope of the problem is limited to the orbital debris mitigation requirements in Section 13 of the Outer Space and High-altitude Activities (Licenses and Permits) Regulations 2017.
20. Although a permit or licence application requiring a waiver of a threshold is unlikely, having a waivers process is necessary to provide clarity to regulators and regulated parties and maintain alignment with international best practice. Having a clear waivers process in place will help the regulatory decision maker be prepared for cases when it is required, while also serving to reduce their legal risk.

#### **What objectives are sought in relation to the policy problem?**

21. The policy has been developed in accordance with the purposes of the Act to:
  - a. facilitate the development of a space industry and provide for its safe and secure operation.
  - b. implement certain international obligations of New Zealand relating to space activities and space technology.
  - c. manage any potential or actual liability that may arise from the space industry.
  - d. establish a system for the regulation of space activities and certain high-altitude activities.
  - e. preserve New Zealand’s national security and national interests.

22. In addition, the following policy objectives describe the outcomes that we are specifically seeking to achieve through amending the ODMP requirements in the Regulations:
- a. Limit the risk of orbital debris generation from space objects launched from New Zealand.
  - b. Provide greater regulatory certainty to the regulator and regulated parties.
  - c. Maintain a flexible regulatory environment.
  - d. Ensure alignment with international regulatory best practice and standards for orbital debris mitigation.

## Section 2: Deciding upon an option to address the policy problem

### What criteria will be used to compare options to the status quo?

23. Options will be assessed as to how well they met the following criteria:
- a. **Limit debris generation** – limit the risk of debris generation from space objects launched from New Zealand.
  - b. **Provide regulatory certainty** – provide greater regulatory clarity and certainty to the regulator and regulated parties and reduce legal risk for the regulatory decision maker.
  - c. **Maintain a flexible regulatory environment** – maintain a flexible and responsive regulatory environment which does not inhibit space activity occurring in and from New Zealand.
  - d. **Alignment with international best practice** – ensure alignment with international regulatory best practice and standards for orbital debris mitigation and meet our international obligations.
24. The following areas were included in scope of the policy development process to identify and consider options to address the issues with the status quo:
- a. The incorporation of international technical standards that set acceptable risk thresholds for orbital debris.
  - b. Verification methods for demonstrating compliance with technical standards.
  - c. Waiver processes for considering deviations from the risk thresholds set out in standards.

25. Options are ranked on a scale as to how well they meet the policy objectives, where:

++	much better than doing nothing/the status quo/counterfactual
+	better than doing nothing/the status quo/counterfactual
0	about the same as doing nothing/the status quo/counterfactual
-	worse than doing nothing/the status quo/counterfactual
--	much worse than doing nothing/the status quo/counterfactual

26. The criteria against which the options are measured are directly linked to the policy objectives. We sought an option which best meets all the criteria. There is a necessary trade-off to be made between certainty and flexibility. In particular, we sought an approach that provides greater regulatory certainty while maintaining as much flexibility as possible and managing debris risks in a manner that is consistent with international best practice.

### What scope will options be considered within?

27. Both statutory and non-statutory levers have been considered to achieve the policy objectives. Non-statutory guidance can help provide additional information and clarity but cannot completely resolve the current uncertainty.

28. Given we are seeking to achieve greater regulatory certainty, amendments to the secondary legislation are the most feasible option for achieving the policy objectives and addressing the problems identified as arising from the status quo because:

- a. The issue is in regard to language in the secondary legislation which lacks clarity and certainty.
- b. The secondary legislation leaves room for interpretation and creates uncertainty for the regulatory decision maker which could not be adequately rectified by non-regulatory options.

29. Non-statutory measures including operational policy will be updated in line with amended regulations to provide further clarification and operational guidance for regulated parties.

30. The international nature of space activities means that it is important that space actors adhere to international best practice. MBIE has engaged with other space agencies and regulators to understand their approach to ODMP requirements and elements that are relevant to the problems identified with the status quo. Other comparable regimes use both statutory and non-statutory levers to address this issue and as such, we only considered options that would ensure New Zealand remains aligned with international best practice.



31. The options must also be consistent with New Zealand’s international obligations. Of particular relevance to orbital debris mitigation are the Treaty for Principles Governing the Activities of States in the Exploration and Use of Outer Space (the Outer Space Treaty) and the Convention on International Liability for Damage Caused by Space Objects (the Liability Convention). The options below are all consistent with our international legal obligations.

## What options are being considered?

### Option One – Status Quo

#### *International standards*

32. This option would maintain our current requirements where applicants are encouraged in the Regulations, but not required, to apply international technical standards to their ODMP. Instead, the regulations prescribe the outcomes an orbital debris mitigation plan is required to achieve (essentially minimising the risk of debris). Recommended standards are included in operational policy to provide guidance to applicants.
33. International technical standards set out acceptable risk thresholds reflecting best practice that operators must comply with in developing their ODMP. These standards also provide important supporting information on compliance verification methods (including methods for calculating whether thresholds have been met).
34. In recommending but not requiring applicants to adhere to an international standard, this approach was designed to allow operators flexibility in their approach to meeting the requirements.

#### *Verification*

35. Under the status quo, when using one of the international standards or guidelines outlined by MBIE in operational policy, applicants must demonstrate compliance with the ODMP requirements through the use of specified software verification methods. If an operator chooses to use a standard verification tool or high-fidelity assessment tool that is not specified in the guidance information, the applicant must justify its use from a technical standpoint and have its use approved by MBIE.

#### *Waivers*

36. The status quo does not specify risk thresholds or provide for waivers from those thresholds as is the case in several of the international orbital debris mitigation standards, such as the NASA standard. The regulations can be interpreted as allowing for the Minister to exercise discretion and consider possible deviations from internationally accepted risk thresholds on a case-by-case basis because they clearly contemplate the use of internationally accepted standards. However, the position is unclear which creates uncertainty and legal risk for the regulatory decision maker.

#### *How well does this option meet the policy objectives?*

37. Feedback from regulated parties, other space agencies and regulators has highlighted that the status quo is not fit for purpose in a regulatory context.
38. This option does provide for flexibility and alignment with international best practice; however, the experience of both the regulator and regulated parties suggests that greater clarity is needed in the regulations about what ‘minimising the risk’ means, what risk thresholds are acceptable and whether there can be waivers from the acceptable risk threshold in some circumstances.

39. Non-statutory guidance sets out standards and guidelines that can be used to demonstrate compliance with ODMP requirements. Some of these standards and guidelines allow for deviations from the risk thresholds they contain. However, under the status quo, our approach to considering deviations from internationally acceptable risk thresholds, including the factors we would consider for a deviation, is not formalised. This leads to a lack of certainty for the regulator and applicants to the regulatory regime.

**Option Two – Amendments to the secondary legislation**

40. Option Two proposes minor changes to Section 13 of the Outer Space and High-altitude Activities (Licenses and Permits) Regulations 2017 to prescribe standards that specify acceptable risk thresholds and to formalise a waivers process to provide greater clarity including factors for consideration in a waiver’s decision.

*Requiring applicants to comply with a specified standard*

41. This option proposes to specify technical standards in the secondary legislation. Applicants ODMPs must comply with one of these standards.
42. Following a review of international guidelines and standards, and feedback gathered from stakeholder consultation, a set of international standards have been identified which we consider sufficiently demonstrate orbital debris risk has been minimised in line with the international best practice. To ensure the objective of maintaining a flexible regulatory environment is met, two international standards will be included in the Regulations.
43. These technical standards contain risk thresholds for a range of aspects of orbital debris mitigation.
44. Operators would be required to adhere to the *latest version* of one of the standards or guidelines set out in the table below.

Authority	Standards/Guidelines
National Aeronautics and Space Administration (NASA)	NASA-STD-8719.14 – NASA Technical Standard
European Space Agency (ESA)	ESSB-ST-U-007 ESA Space Debris Mitigation Requirements. This includes reference to: ESSB-HB-U-002 ESA Space Debris Mitigation Compliance Verification Guidelines (which incorporates ISO standard 24113) and, ESSB-ST-U-004 ESA Re-entry Safety Requirements.

45. The NASA standard and ESA Guidelines (ESSB-HB-U-002) have been the most frequently used for ODMP assessments by operators applying for a licence or permit under the status quo and have debris mitigation requirements which are reflective of international best practice. ESA’s new standard (ESSB-ST-U-007) has only recently been released and expands on the existing guidelines.

46. The Minister for Space already has the ability to treat an overseas licence, permit or other authorisation as satisfying some or all of the criteria for the granting of a launch licence, overseas launch licence, payload permit and overseas payload permit. This can allow operators to use standards with comparable ODMP thresholds which we do not officially recognise or have the ability to verify.
47. MBIE will undertake a regular review of the standards to ensure the standards remain fit for our regulatory regime.

#### *Inclusion of a waiver provision*

48. The objective is for operators to achieve compliance with international standards and demonstrate they have reduced orbital debris risks in line with specified thresholds. However, given the rate of technology development, the emergence of new research regarding the orbital environment and design of space objects, and the time required for international standards and best practice to develop, it may not always be possible for an operator to meet the prescribed risk thresholds within a standard.
49. To account for this, many international standards have a waiver process built in for considering ODMPs which deviate from the threshold. This includes the NASA standard which would be specified in the Regulations under Option Two.
50. A waiver provision would also address scenarios where specific thresholds are unable to be met, but the overall operation delivers the required safety outcomes.
51. The waiver provision in the standards we propose to include in the Regulations are not designed for New Zealand's regulatory regime. For example, the NASA standard provides for waivers to be given by senior NASA executives. Therefore, under Option Two, a New Zealand relevant waivers process would be established to maintain alignment with the international best practice set out in these standards.
52. The NASA and ESA standards each have an associated software package (verification software) that is used to demonstrate compliance with the risk thresholds set out in the standard.
53. NASA and ESA verification software is updated relatively regularly and in response to a variety of factors, including changes in scientific understanding. The orbital debris mitigation standards require that the latest version of the software be used. The standards themselves are also updated, though less frequently.
54. However, as the standards themselves, or the verification software can be updated without public notice, this can pose challenges for applicants using a particular standard or its associated software to demonstrate regulatory compliance. For example, the standards or software may update when an applicant is partway through the payload permit application process or after they have gone through extensive development of a spacecraft designed to comply with the risk thresholds in previous version of the standard.
55. This option proposes using the waiver provision to also consider, on a case-by-case basis, whether an ODMP which complies with an older version of an accepted standard or that was produced using an older version of the verification software could be accepted as meeting regulatory requirements.

56. To ensure public confidence in the process, to provide greater certainty to regulated parties, and to maintain flexibility in line with the purposes of the Act, the criteria for consideration in a waiver decision would be specified in the Regulations, and include consideration of the following, along with any other factors the Minister deems relevant:
- a. Degree of the deviation – i.e. consideration of the degree of deviation from the threshold and how significant the additional risks to the public and Earth and space environments are, etc.
  - b. Significance of the mission – i.e. will there be significant benefits to humanity at large and/or New Zealand (including potential for lives to be saved by the mission), is this a novel mission that will produce important scientific outcomes, are the benefits of the mission likely to outweigh the risks associated with deviating from the standard, etc.
  - c. Feasibility of achieving compliance – i.e. what is required for the vehicle/payload to be brought into compliance with the risk thresholds and what are the trade-offs, what measures have been taken to ensure the risk has been minimised within the constraints of the design, is the mission time sensitive, etc.
  - d. Consistency with the purpose of the Act – the circumstances in which a waiver may be granted should be consistent with the purposes of the Act.
  - e. Recency of any updates to standards or associated software verification tools software – in some cases the design of a launch vehicle or payload may have been finalised in accordance with standards or software verification tools at the time, and as a result may not meet some risk thresholds in updated versions. Applicants will be required to use the latest versions of both the standards, and associated software verification tools unless a waiver is granted.
57. Granting of a waiver would only be considered in exceptional circumstances as the primary objective would be for operators to achieve compliance with the acceptable risk thresholds.
58. Granting of a waiver would be at the Minister's discretion. During the policy development process, consideration was given to whether to set a 'bottom line' where we would not grant a waiver if the deviation was greater than a certain limit. This was ruled out due to the potential for the bottom line to be perceived as the new threshold, and because this would depart from international best practice.
59. Clarifying that standards with thresholds can be waived will remove the current legal uncertainty about whether there can be a waiver if a threshold within a standard is not met. As waivers are discretionary, applicants will necessarily face some uncertainty as to the outcome, but specifying the criteria that apply to these decisions will mitigate this to some extent by providing guidance about when waivers are likely to be granted. It enables some measure of certainty while providing flexibility where there are grounds for it.

### *Flexibility in approach to high fidelity assessments*

60. In cases where the results of an assessment with verification software show particular risk thresholds are not met, a higher fidelity assessment may be required. NASA and ESA have their own models for carrying out high-fidelity assessments.
61. In addition to recognising the results of NASA and ESA high-fidelity assessments, we propose allowing applicants to nominate an approach to high fidelity assessment with an equivalent level of accuracy to the NASA and ESA methods, for consideration by the Minister. This will provide flexibility for applicants and ensure the most appropriate method of high-fidelity assessment can be used.

### *How well does this option meet the policy objectives?*

62. Comparative to the status quo, this option would better meet the objective of providing regulatory certainty to both the regulator and regulated parties through making explicit:
  - a. How operators can achieve compliance (i.e. in applying a specified standard)
  - b. How we measure compliance (i.e. requiring an assessment using a suitable verification tool demonstrating compliance with the specified standard)
  - c. What we consider as minimising the risk of orbital debris generation (i.e. risk is minimised when in line with the accepted standards).
63. Feedback received from targeted consultation with stakeholders demonstrates support for this option. None of the respondents said that this option would impact their organisation's space or high-altitude operations from New Zealand, with one submission indicating these changes would be beneficial to them and the New Zealand space industry.

### **Discarded option – Amendments to the secondary legislation**

64. In developing Option Two, we considered a third option which would involve the incorporation of technical standards while omitting the waivers provision. This was discounted as it was determined it would not meet our objectives due to being an inflexible approach that is out of alignment with international best practice and would put our industry at a competitive disadvantage.



### How do the options compare to the status quo/counterfactual?

	Option One – <i>Status Quo</i>	Option Two – Specifying standards that ODMPs must meet, clarification on verification and inclusion of a waivers provision
<b>Limit debris generation</b>	0	0
<b>Regulatory certainty</b>	0	++
<b>Flexible regulatory environment</b>	0	0
<b>Alignment with International best practice</b>	0	++
<b>Overall assessment</b>	0	4

Example key for qualitative judgements:	
++	much better than doing nothing/the status quo/counterfactual
+	better than doing nothing/the status quo/counterfactual
0	about the same as doing nothing/the status quo/counterfactual
-	worse than doing nothing/the status quo/counterfactual
--	much worse than doing nothing/the status quo/counterfactual

## Which option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

65. Both the status quo and Option Two achieve the objective of minimising orbital debris risk from objects launched from New Zealand. Similarly, both options align with international best practice through requiring risks to be minimised, however, the addition of a waiver provision under Option Two is better aligned with international approaches to orbital debris mitigation. Option Two will also provide greater certainty for regulated parties than the status quo and will reduce legal risk for the regulatory decision maker.
66. Regulatory certainty and maintaining flexibility are not mutually exclusive. Compared to the status quo, Option Two provides greater clarity than Option One by codifying standards while maintaining flexibility through accepting multiple international standards and formalising a waiver process. Therefore, Option Two provides a better balance between the objectives of achieving regulatory certainty and maintaining flexibility while remaining consistent with international best practice and ensuring debris is appropriately managed.
67. Option Two is likely to best address the problems identified and meet the policy objectives.

### *Inclusion of international Technical Standards*

68. This is a relatively minor change to the regulations to recognise international technical standards, which provides regulatory certainty for operators by clarifying that risks are minimised when in line with international best practice. Specifying the acceptable risk threshold also removes room for interpretation and legal risks through clarifying what is considered 'minimised' risk.
69. Incorporation of international standards maintains alignment with international best practice as the standards cover internationally accepted risk thresholds, verification methods and other supporting material. Specifying standards and acceptable risk thresholds ensures all ODMPs for space activities occurring from New Zealand meet accepted risk thresholds.
70. The option is not prescriptive and maintains flexibility by recognising more than one standard and allowing regulatory applicants to choose their preferred standard.

### *Inclusion of a waiver provision*

71. In some circumstances, waivers from the thresholds set out in the standards may be justified. The inclusion of a waiver provision will provide clarity about the ability to grant a waiver from a risk threshold in exceptional circumstances, enabling greater flexibility.
72. Setting out the criteria for consideration of waivers addresses the issues raised by operators regarding regulatory clarity and promotes transparency regarding the waiver process.
73. Inclusion of a waiver provision also aligns with international best practice as the standards we propose to include in the Regulations have associated waivers processes.

## What are the marginal costs and benefits of the option?

<b>Affected groups</b> <i>(identify)</i>	<b>Comment</b> <i>nature of cost or benefit (e.g., ongoing, one-off), evidence and assumption (e.g., compliance rates), risks.</i>	<b>Impact</b> <i>\$m present value where appropriate, for monetised impacts; high, medium or low for non-monetised impacts.</i>	<b>Evidence Certainty</b> <i>High, medium, or low, and explain reasoning in comment column.</i>
<b>Additional costs of the preferred option compared to taking no action</b>			
Regulated parties Regulators Others (e.g., wider govt, consumers, etc.)	No additional costs are imposed.	Low	ODMPs that minimise the risk to the environment are required as part of New Zealand’s role as a responsible space actor. Regulated parties carrying out space activities from New Zealand need to meet the requirements in the Act and therefore we have not identified any additional costs to regulated parties seeking to/carrying out responsible space activities, as orbital debris mitigation plans have always been a requirement.
<b>Non-monetised costs</b>	<i>No additional costs identified.</i>		
<b>Additional benefits of the preferred option compared to taking no action</b>			
Regulated parties	Regulatory certainty provided to operators lowers the potential for non-compliance and clarifies the requirements.  Allows greater certainty for business planning purposes, reducing likelihood of activities being disincentivised due to lack of regulatory uncertainty.	Medium	Operators have asked for greater regulatory clarity regarding compliance with ODMP requirements.  We see additional benefits to regulated parties from implementing Option Two when compared to the status quo.  Stakeholder consultation has demonstrated agreement with the proposed Option Two, with many submissions providing feedback to strengthen the proposals.

Regulators	<p>Prescribing standards provides clarity for the regulator, mitigating legal risks.</p> <p>Clear process and justifications for considering waivers and deviations from the threshold in extreme circumstances.</p>	Medium	A clear formalised process provides clarity for the regulator and streamlines the regulatory process.
Others (e.g., wider govt, consumers, etc.)	Formalised waivers process promotes transparency and public confidence in a robust regulatory system.	Low	Implementing this option is likely to have a positive reputational impact on New Zealand's approach to space activities.
<b>Non-monetised benefits</b>	<i>Significant additional benefits outlined above.</i>		

74. This is a relatively minor change to the regulations which is seeking to clarify already existing practices set out in published guidance material. It is unlikely there will be any additional or unintended impacts from the proposed approach.
75. The costs and benefits identified above are non-monetary and therefore a qualitative assessment has been made. The level of impact has been determined by considering the cost/benefit and its impact on achieving the policy objectives relative to the status quo and no action. This is supported by MBIE's policy analysis and feedback gathered during stakeholder consultation.

## Section 3: Delivering an option

### How will the new arrangements be implemented?

76. MBIE will be responsible for the ongoing operation and enforcement of the regulations.
77. The changes to the regulations will come into effect in November 2024.
78. Stakeholders have been consulted and are aware of the proposed changes.
79. The proposed changes will be minor amendments to existing legislation and will require applicants to apply specified international standards.
80. Updates to the ODMP operational policy will be required to reflect regulatory amendments. Operational policy guidance for operators will be published on MBIE's New Zealand Space Agency website. A communications plan to communicate the proposed changes will be developed.
81. Following implementation, as part of the regulatory process for granting a launch or payload licence, regulated parties will continue to have regular engagement with MBIE who ensures operators understand and meet all requirements.
82. Standards included in the Regulations and their associated software verification tools are publicly available.

## How will the new arrangements be monitored, evaluated, and reviewed?

83. As the up-to-date versions of standards and associated software verification tools will be required to be used, MBIE will undertake a regular review of the specified standards to ensure they remain fit for purpose and meet the needs of the regulator and regulated parties.
84. Regarding waivers, consultation with relevant parties and overseas space regulators/quasi-regulators (e.g., NASA, ESA) will be undertaken should it be necessary to support the advice provided to the Minister.
85. Regulated parties work closely with the regulator when applying for licences and permits – this will be maintained in the amendments to the legislation, providing opportunity to raise concerns and work through any issues that may arise.
86. Amendments to published guidance can be made as required following feedback from the regulator and regulated parties and to address any unforeseen operational issues or reflect any updates to standards and best practice not specified in the amended Regulations.